

AMENDMENT

Amendment to the Specification

Please amend Paragraphs [0020], [0026-0030], [0053], [0064-0065] and [0070-0071] as follows:

[0020] FIG. 6 depicts a side elevation view in section of a handle portion of a proximal end of the surgical instrument of FIG. 1 including a [rotating] rotation-to-rotation (“rotational”) articulation control.

[0026] FIG. 12 depicts a perspective view looking downward, forward and to the right of a distal portion of the handle portion of the surgical instrument of FIG. 1 partially cutaway to expose a lateral-to-longitudinal articulation control mechanism as an alternative to the rotating articulation control mechanism of FIGS. 1, 2, and 6-9.

[0027] FIG. 13 depicts a perspective, exploded view of a lateral-to-rotation articulation control mechanism as an alternative to the lateral-to-longitudinal articulation control mechanism of FIG. 12.

[0028] FIG. 14 depicts a front elevation view in section of the lateral-to-rotation articulation control mechanism of FIG. [12] 13.

[0029] FIG. 15 depicts a detail view of a locking block in an engaged state of the lateral-to-rotation articulation control mechanism of FIG. 13.

[0030] FIG. 16 depicts a detail view of the lateral-to-rotation articulation control mechanism of FIG. 13 in a disengaged state.

[0053] ROTATION-TO-ROTATION (“ROTATIONAL”) ARTICULATION CONTROL OF AN ARTICULATION MECHANISM

[0064] LATERAL-TO-LONGITUDINAL ARTICULATION CONTROL OF AN ARTICULATION MECHANISM

[0065] FIG. 12 illustrates a lateral articulation control 400 for a surgical instrument 402 that incorporates an articulation mechanism 404 pivoted by a longitudinal motion from an articulation control rod 406 as an alternative to the rotational articulation control of FIGS. 6-9. Approaches to articulating a surgical stapling and severing instrument tend to be complicated by integrating control of the articulation along with the control of closing the end effector to clamp tissue and fire the end effector (i.e., stapling and severing) within the small diameter constraints of an endoscopic instrument. Generally, the three control motions are all transferred through the shaft as longitudinal translations. For instance, U.S. Pat. No. 5,673,840 discloses an accordion-like articulation mechanism (“flex-neck”) that is articulated by selectively drawing back one of two connecting rods through the implement shaft, each rod offset respectively on opposite sides of the shaft centerline. The connecting rods ratchet through a series of discrete positions. Another example of longitudinal control of an articulation mechanism is U.S. Pat. No. 5,865,361 that includes an articulation link offset from a camming pivot such that pushing or pulling longitudinal translation of the articulation link effects articulation to a respective side. Similarly, U.S. Pat. No. 5,797,537 discloses a similar rod passing through the shaft to effect articulation. An end effector 408 is connected to a shaft assembly 410 by a pivot 412 in a manner similar to that described above but without a gear capability and a rotating articulation drive tube. Thus only one pivot 412 is shown but it will be appreciated that another pivot is formed along the axis of the first pivot 412, thereby connecting the other lateral sides of the end effector 408 and shaft assembly 410. An articulation opening 414 is formed by having the pivot 412 extended away from the circumference of both a distal end 418 of the shaft assembly 410 and a proximal end 420 of the end effector 408. The size of the articulation opening 414 is radially sized about each lateral side of the pivot axis for the desired maximum allowed amount of articulation.

[0070] LATERAL-TO-ROTATIONAL CONTROL OF AN ARTICULATION MECHANISM

[0071] FIGS. 13-16 depict a lateral-to-rotational articulation control 500 that provides similar intuitive clinician control features as does the lateral-to-longitudinal articulation control 400 of FIG. 12 for an articulating surgical instrument 502 that is similar to that described for FIGS. 1-11. In particular, the lateral articulation control 500 converts a lateral motion into a rotational motion transferred by an articulation drive tube 504 to an articulation mechanism (not shown in FIGS. 13-16). A downward projecting gear rack 506 is coupled to a lower side 508 of a lateral control actuator 510 for engaging with longitudinally aligned grooves 512 on a top face of the articulation drive tube 504.